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| 10/623,151 | 07/18/2003 | Durrell U. Howard | 29676-29 | 5207 |

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NEXSEN PRUET JACOBS & POLLARD LLC
PO DRAWER 2426
COLUMBIA, SC 29202-2426

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| EXAMINER |
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ENGLISH, PETER C

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| ART UNIT | PAPER NUMBER |
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3616

DATE MAILED: 05/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/623,151

Applicant(s)

HOWARD, DURRELL U.

Examiner

Peter C. English

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 20031107.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Preliminary Amendment

1. The preliminary amendment filed on 12 January 2004 has been entered.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description:

147, shown in Figs. 6 and 9.

155, shown in Fig. 7.

255, shown in Fig. 12.

3. The drawings are objected to because:

In Fig. 6, both occurrences of "121" should be "126". See Fig. 9, and note that "121" corresponds to the pressure switch in Fig. 4 (see page 21, line 24).

In Fig. 7, "143" should be "102". See Fig. 6.

In Fig. 8, "163" should be "130". See Fig. 6.

In Figs. 12 and 13, the lead line for "233" is not directed to an aperture in pillar 270. See page 32, lines 18-20.

The bottom margin on sheet 10 is insufficient, resulting in portions of Fig. 15 being cutoff during reproduction.

4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The lengthy specification has not been checked to the extent to identify every possible minor error. Cooperation is requested in correcting any errors applicant might become aware of.

6. The specification is objected to because:

At page 21, lines 13 and 20, “regular” should be “regulator”.

At page 26, line 26, “142” should be “139”.

At page 29, line 13, “arcuate” should be deleted because it is inaccurate. Note that “arcuate” refers to something that is curved.

At page 31, line 7, “jacket 213” should be “jacket 205”.

At page 31, line 8, “sleeve” should be “jacket”.

At page 31, lines 28-29, “an annular depending ridge of the clutch disk 249 serves as a trim piston component 264” is inaccurate because the annular ridge 264 is not the portion of the clutch disk 249 that is acted on by fluid pressure delivered through passage 249 and therefore does not function as a “piston component”. See Fig. 12.

At page 34, line 5, “20'” should be “20”.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. Claims 1-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, at line 3, “frame means” is an indefinite mean-plus-function recitation because there no function is clearly defined by the word “frame”. Note also the occurrences of “frame means” in claim 1, at lines 25 and 33.

In claim 1, at line 10, “each of the piston member detents and rotary member detents” is indefinite because plural piston member detents and plural rotary member detents have not been previously defined. The examiner suggests: at line 10, delete the first occurrence of “detents”.

In claim 2, at line 1, “said connection means” lacks proper antecedent basis. The examiner suggests: at line 1, change “connection” to “connecting”.

In claims 2 and 3, at line 6, and in claim 4, at line 8, “said detent seat” is indefinite because more than one detent seat has been previously recited. The examiner suggests: in claims 2 and 3, at line 6, and in claim 4, at line 8, change “seat” to “seats”.

In claim 8, at line 7, “said relative axial movement” is indefinite because more than one relative axial movement has been previously defined. The examiner suggests: at line 7, insert “between said support member and said trim piston” after the second occurrence of “movement”.

Claim 9 is indefinite because it contradicts claim 6 from which it depends. Claim 6 recites an “actuating means” in the form of a “trim piston”, and “engaging means” for causing movement of the clutch disk in response to reciprocation of the trim piston. However, claim 9 is drawn to the embodiment of Figs. 12-16 which has no “trim piston” and no “engaging means” for moving the clutch disk in response to movement thereof. In Figs. 12-16, the clutch disk itself is acted on directly by the fluid pressure in the trim chamber and moved directly by the fluid pressure itself. Furthermore, claim 9 is indefinite because it repeatedly refers to the “trim piston” (lines 2, 4 and 7), when in fact it is the “clutch disk” that should be referred to.

In claim 9, at line 6, “said relative axial movement” is indefinite because more than one relative axial movement has been previously defined.

In claim 10, at line 2, “causes said trim piston to move said clutch disk” is indefinite and inaccurate for the reasons given above with respect to claim 9.

In claim 11, at lines 1-2, “each of the piston member detents and rotary member detents” is indefinite because plural piston member detents and plural rotary member detents have not been previously defined. The examiner suggests: at line 1, delete “detents”.

In claim 11, “the detent seat” (line 2) and “the seat” (line 3) are indefinite because more than one detent seat has been previously recited. The examiner suggests: at lines 2 and 3, insert “respective” before “seat”.

In claim 11, “said opposing faces” (line 3) and “said up ramp movement” (line 7) lack proper antecedent basis. The examiner suggests: at line 3, change “opposing” to “corresponding”; and at line 7, change “said up ramp movement” to “movement of said bearing member”.

In claim 12, at line 3, “the seat” and “the ramp” are indefinite because more than one seat and more than one ramp has been previously recited. The examiner suggests: at line 3, change “seat” to “seats”, and “ramp” to “ramps”.

In claim 16, at line 2, in claim 17, at lines 1-2, and in claim 21, at line 3, “fluid means” is an indefinite mean-plus-function recitation because there no function is clearly defined by the word “fluid”. Note also the occurrence of “fluid means” in claim 23, at line 1.

In claim 17, at line 3, “spring means” is an indefinite mean-plus-function recitation because there no function is clearly defined by the word “spring”. Note also the occurrences of “spring means” in claim 18, at lines 2 and 3.

In claim 20, at line 1, “said bearing members” lacks proper antecedent basis. The examiner suggests: at line 1, delete “said”.

In claim 20, at line 2, “spacer means” is an indefinite mean-plus-function recitation because there no function is clearly defined by the word “spacer”.

In claim 20, at lines 3-4, “said centering detents” lacks proper antecedent basis. The examiner suggests: at line 3, delete the second occurrence of “said”.

In claim 21, at line 8, “said detent seat” is indefinite because more than one detent seat has been previously recited. The examiner suggests: at line 8, change the first occurrence of “said” to “the respective”.

In claim 22, at line 4, “said moved bearing member” lacks proper antecedent basis. The examiner suggests: at line 4, delete “moved”.

In claim 23, at line 3, “said gas pressure” lacks proper antecedent basis. The examiner suggests: at line 3, delete the first occurrence of “said”.

In claim 24, at lines 2-3, “frame means” is an indefinite mean-plus-function recitation because there no function is clearly defined by the word “frame”. Note also the occurrences of “frame means” in claim 26, at lines 2 and 10-11.

In claim 24, at lines 9-10, “each of the piston member detents and rotary member detents” is indefinite because plural piston member detents and plural rotary member detents have not been previously defined. The examiner suggests: at line 9, delete “detents”.

In claim 24, at line 20, “the steering force” lacks proper antecedent basis. The examiner suggests: at line 20, delete “the”.

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In claim 26, lines 4-5 are indefinite because they recite “connecting means” without defining the relationship between the “connecting means” and the “guide means” previously recited in claim 24, at lines 21-23. Since the “connecting means” of claim 26 and the “guide means” of claim 24 correspond to the same structure of the invention, claim 26 is indefinite (i.e., claim 26 inaccurately suggests that the invention includes a “connecting means” that is distinct from the “guide means”).

In claim 29, at lines 1-2, “each of the piston member detents and rotary member detents” is indefinite because plural piston member detents and plural rotary member detents have not been previously defined. The examiner suggests: at line 1, delete “detents”.

In claim 29, “the detent seat” (line 2) and “the seat” (line 3) are indefinite because more than one detent seat has been previously recited. The examiner suggests: at lines 2 and 3, insert “respective” before “seat”.

In claim 29, “said opposing faces” (line 3) and “said outward ramp movement” (line 7) lack proper antecedent basis. The examiner suggests: at line 3, change “opposing” to “corresponding”; and at line 7, change “said outward ramp movement” to “movement of said bearing member”.

In claim 29, at line 11, “the ramp” is indefinite because more than one ramp has been previously recited. The examiner suggests: at line 11, change “ramp” to “ramps”.

Allowable Subject Matter

8. Claims 1-29 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

9. The following is a statement of reasons for the indication of allowable subject matter:

With respect to claim 1, the prior art of record fails to teach a steering control apparatus including the clutch mechanism defined at lines 25-35.

With respect to claim 24, the prior art of record fails to teach a steering control apparatus including means for rotating a rotary cam member relative to a piston cam member in response to movement of a steerable member, a bearing member pressed between the rotary and piston members and located in detent seats, and guide means for preventing rotation of the piston

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member while guiding reciprocation of the piston member toward and away from the rotary member in response to movement of the bearing member away from the detent seats.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter C. English whose telephone number is 571-272-6671. The examiner can normally be reached on Monday through Thursday (7:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul N. Dickson can be reached on 571-272-6669. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Peter C. English
Primary Examiner
Art Unit 3616

pe
16 May 2005